North Carolina Department of Transportation
Transportation Program Management Unit - Value Management
Innovative Technologies and Products Awareness Report
December 7, 2017

PRODUCT HIGHLIGHT – PIVOTED TURNBUCKLE MANHOLE RISER

The innovative Pivoted Turnbuckle Manhole Riser was developed by American Highway Products and has been used throughout North Carolina by cities, towns, municipalities, and the NCDOT. Risers are used on utility boxes, valve boxes, and monuments during projects where the pavement level is being replaced or raised. Compared to traditional risers that are typically made of steel and welded in place, these risers use an adjustable turnbuckle to secure them in place. The turnbuckle manhole risers have shown no on-going issues such as moving under traffic. The lids are easy to install and remove. With these risers, repaving may be completed against the riser riser without issue and no surrounding indent or "dip" in the road surrounding the manhole. The risers cause no issue with snowplowing or other maintenance activities because they are at the grade of the pavement. Manhole installation, without an adjustable riser, takes 90 minutes per riser. The turnbuckle riser takes approximately 30 minutes to install which equates to 16 risers per day for one crew versus five (5).

Example of installation of riser.

The fact that the risers can be adjusted means that older manholes can be repaired at their existing size instead of installing an entirely new manhole or order a riser size that is no longer common at increased cost. They are approved for use on the Approved Product List. The 1 ½" riser rings were used in Division 3 (DC-00155, completed this year) for adjusting manholes, water valves, and monuments on a resurfacing project in addition to other projects throughout the state. There have been no maintenance issues reported after construction.

More information may be found at http://www.ahp1.com/manhole-riser.php .

PRODUCT INNOVATION – PROFOSCOPE

Profoscope.

The Profoscope is a new technology that is being used by the Department's Materials and Tests Unit. This product replaces the existing pachometer, a non-destructive tool used for evaluating hardened concrete structures, which the Department has used for over a decade. The pachometer was used to determine the spacing of reinforcement bars and the depth of concrete cover only. The Profoscope can complete those tasks and provide the location and diameter of the rebar.

Example of Profoscope in the field.

This detailed information provides the necessary data to determine the type of repair needed or milling depth. Insufficient cover could lead to premature pavement distresses as well as potential corrosion in the reinforcement. The Profoscope, made by Proceq, can capture this information in a quick and thorough way. The Profoscope can provide an alert at threshold depths which allows the engineer to inspect and cover a larger area. This innovation improves project delivery and saves the Department time and money. While in the field, the engineer can manually store data on concrete cover and rebar details at a specific spot or during a widespread scan it can automatically scan every time a rebar is detected and sore valuable data. The data collected in the field on the rebar depth can be exported and used for design. This innovative technology is new to the Department as of this year and is aiding the Department in ensuring that sufficient concrete cover is on bridge decks. More information may be found at: https://www.proceq.com/compare/rebar-detection-and-cover-measurement/